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TORONTO, JULY, 1927

No. 7

SPECIAL ARTICLES

COMMUNITY MILK SUPPLIES IN ONTARIO

DR. D. V. CURREY

THE SIX QUESTIONS

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Community Milk Supplies in Ontario

By DR. D. V. CURREY,

Medical Officer of Health, St. Catharines, Ont.

There are only two foods capable of sustaining life which we use as Nature has provided them, one of these being milk. We hardly realize the many different ways this important food is consumed or the benefit that may be derived from it. The more milk is used by a Nation the healthier those people appear to be. Mother's milk is the only proper food for the new-born infant, and if by any chance this supply cannot be used, modified cow's milk is the one substitute; this, however, is only a makeshift at the best, because the digestive apparatus of the baby is essentially different from that of the calf, for which cow's milk is really intended, but by proper dilution with water and sugar under the supervision of the physician, cow's milk may be adapted for the use of nearly any infant. When we consider that 70% of City babies are given cow's milk which has been handled several times, which is from twelve to forty-eight hours old, which may have been kept in a warm place in transit, and which may have come from diseased cows to start with, is it any wonder that the death-rate of bottle fed babies is eight or ten times that of breast fed? On account of this, it would appear that one of the chief duties of every Public Health Official is to teach the modern mother that there is only one correct way to feed her baby—the way Nature has provided. In bottle fed babies the high rate of mortality may not be due entirely to the milk itself, but also to the improper way in which the artificial feeding is prepared and kept.

After the child is weaned it should live to a great extent on milk, and when two years of age should take at least a quart of milk each day. With the addition of bread and butter, milk forms a perfectly balanced diet for the growing child, and the sooner mothers realize this the healthier will our children be. In milk there is a very great amount of lime, without which the bones of the body cannot become strong; it contains protein, which builds up the body strength, and some of the

Read at the Convention of Ontario Health Officers' Association, June, 1927.

protein, together with the milk, sugar and the fat (cream) are used to provide body heat. Milk may be the best food for children or the most dangerous; bad milk kills more babies each year than all the infectious diseases combined. In spite of this the average person pays very little attention to a food which may be very dangerous to health; the price of this commodity seems of much more importance than a pure milk supply. One Health Official has said, "Milk is milk to the average customer; a white fluid in a bottle with a cream line is about all he is interested in".

The expectant mother should take plenty of milk, as this helps her to nurse her own baby later on; it also supplies to her blood much of the lime which the foetus is using up. Dentists tell us that the permanent teeth are formed before the child is born, and that the hardness of these teeth in the adult depends to a large extent on the amount of milk the mother takes during the time that she is pregnant.

With the exception of Tuberculosis and Septic Sore Throat, there are no other diseases passed on by cow's milk to humans; but from contamination from those handling milk the following diseases may be transmitted: Typhoid Fever, Diphtheria, Scarlet Fever, Septic Sore Throat and Tuberculosis. Dr. J. W. Trask¹ of the United States Public Health Service investigated three hundred and seventeen milk-borne epidemics of Typhoid, one hundred and twenty-five of Scarlet Fever, and fifty-one of Diphtheria. Rosenau² mentions that in Boston in the years 1907-1911 there were milk-borne epidemics of Diphtheria, Scarlet Fever, Typhoid Fever and Septic Sore Throat. Dr. W. H. Park³, summing up his evidence in regard to Tuberculosis, states: "About 7% of the infants and young children under five years of age dying from Tuberculosis do so because of infection derived from infected milk or milk products. Fatal Tuberculosis due to bovine bacilli is rare in those over five years of age, but, on the other hand, infection of the lymph nodes is frequent; 30% or more of Tubercular lymph nodes occurring in children between the ages of five and sixteen years are contracted through bovine bacilli". On account of the comparatively few milk-borne diseases, it would not appear difficult to have good milk in every community in this Province, but the more the question is studied the greater the problem appears to be. In his admirable work, "The Modern Milk Problem", MacNutt⁴ begins:

"That there exists to-day a large and, in many instances, acute milk problem is being increasingly recognized. Most persons, however, appreciate the nature of the matter no further than that it involves a "campaign for pure milk" which appears to them similar to the movements for other municipal improvements. Even to the well-informed citizen the factors and persons involved—the dairy farmer, the middle-

man dealer, the municipal official—appear in no distinct perspective; he is only vaguely aware of the contentions of these different parties, except as newspaper publicity may occasionally bring one or another of them to the fore; his interest usually goes no further than a jealous watchfulness of the price of the daily family supply; he entertains, therefore, no particular ideas as to improvements and readjustments and the ways of bringing them about. And this is no wonder when the officials and legislators to whom the public looks for remedies are themselves frequently puzzled for an answer to this much-debated question”.

To be sure of having safe milk we must first of all make sure that every cow in every herd producing the milk is healthy. This may be done by a well-trained milk inspector each month; every cow should be tuberculin tested and the reactors destroyed; if this were done, Bovine Tuberculosis among children would be quickly wiped out. The stables where dairy cattle are kept should be clean, well ventilated and well lighted. The cows must be kept groomed, the udders kept clipped, and the under part of the cow should be wiped off with a damp cloth just before milking. The milker's hands must be clean and kept dry. The milk pails should be absolutely clean, having been scoured out with boiling water, and should be of the small top type. The milk from each cow should be cooled in a proper milk house as soon as received, and for this ice is absolutely necessary. From that time until the milk is delivered to our doors (except when pasteurization is done,) the temperature should never be above 55°F. If in addition we were sure that everyone who handled the milk was healthy, there would not be any need for the Medical Officer of Health to worry about the milk supply, but we all know that the milk used by our citizens, with few exceptions,, is far from this ideal.

Souring of the Milk.

Most of the complaints made to the Health Officer are that the milk does not keep well. The souring of milk is due to bacteria, which can only multiply rapidly in warm milk, so that the cooler milk is kept the longer it should stay sweet. If the farmer will cool the milk as soon as it is received from the cow, if the dairyman will keep it cool, and if the householder will put it on ice or in a cool place as soon as it is delivered, then milk will keep indefinitely. It is usually in transit from the farm to the dairy that the milk becomes warm, and this accounts to a great extent for the milk not keeping after delivery. The consumer, however, is often not as careful as should be; milk is often left standing on a doorstep for hours after delivery, and sometimes with the sun shining on it. Every house should have a small box with a well-fitted

cover sunk in the ground near the back door, and the milkman should be instructed to put the milk there. This keeps the milk cool in the Summer, and if straw or sawdust is put in the box, the milk in Winter will not freeze quickly. Milk sold in bulk will not keep nearly as well as bottled milk on account of the contamination in handling, etc., and because the container into which the milk is put by the milkman, as a rule, is not absolutely clean; in many cases it has been exposed to dust for hours before the milkman arrives.

Temperature Experiment.

In order to determine the effect of temperature, we took two 5-gallon milk cans filled with water, one at a temperature of 98°F., the other at a temperature of 51°F. A pint bottle of milk at 56°F. was placed with the milk cans. All three were put on a cement floor in a room where the air temperature was 76°F., readings being taken every hour from 3 p.m. until 7 a.m. the following day. The temperature of the room dropped to 66°F. in the fifteen hours. The temperature of the water in the warm can gradually dropped, reaching its lowest level, 72°F., in sixteen hours. Presuming that this can originally was the same temperature as milk produced at the farm which had not been chilled, it would not have cooled off during the night even when the temperature dropped as low as 66°F. The can of cool water gradually rose, and in fifteen hours was practically the same as the room temperature, but even at 65.2°F. it would have been a fairly safe milk. The pint bottle of milk, starting at a temperature of 56°F., rose very rapidly, reaching the air temperature in nine hours, showing that even when taken from the refrigerator, milk becomes very rapidly unsafe when left in a warm room.

Kinds of Milk.

There are several kinds of milk being supplied to our Municipalities:

- (1) Ordinary Raw Milk.
- (2) Raw Milk from Accredited Herds.
- (3) Certified Milk.
- (4) Pasteurized Milk.

Raw Milk.

There is no doubt that good raw milk can be produced if the farmer will pay attention to it, but on account of the danger of Tuberculosis it is inconceivable how a farmer can possibly produce safe raw milk and not think enough about his milk supply as to be sure that it is not infected with Tuberculosis. Many milk producers keep their cows just as they do the remainder of their live stock; the milking is done

in a rough way, the dirt is practically never washed from the hands, and the cows are caked in manure. There is no milk house, and the cans are washed in the kitchen or just under the pump. The water supply of the well used has never been tested, even when it may be in close proximity to a cess-pool. The dipper, which hangs prominently on his wagon, ladles out the milk into open receptacles, which possibly have been standing in the sun and exposed to dust and animal contamination for hours.

Raw Milk from Accredited Herds.

During the past few years, many farmers anxious to protect their herds from Tuberculosis, and to produce safer milk, have had their herds tuberculin tested. This test consists essentially in the hypodermic injection of an emulsion of killed bovine tubercle bacilli; the animals infected with Tuberculosis reacting with a marked rise in temperature, and it is now considered by Health Officials to be reliable and accurate when properly applied. The reactors should be excluded from the dairy herd, and while in doing so an economic question comes up, still a good many farmers have considered the accredited herd plan worth while. In many instances a whole herd of dairy cattle have been found to react. The Health of Animals Branch at Ottawa up to 1925 in testing 400,000 cattle found 12.8% to be positive reactors.

This milk is safer than ordinary raw milk, but only Tuberculosis has been ruled out, however, it is a step in the right direction. It at least shows that the producer is thinking about milk, and realizes the danger of ordinary raw milk.

Certified Milk.

Certified milk may be defined as milk produced under the strictest sanitary conditions by a producer who has entered into an agreement with the Board of Health who issue the certificate. This milk is the highest quality of raw milk, and the bacteria count must be under 10,000 per cubic centimeter. On account of the care in production and the extra help needed, the cost is usually higher than the average family can afford. The dairies are subjected to periodical inspection, the milk to frequent analyses, and all persons who come in contact with the milk must be perfectly healthy. Special care is taken to make sure that there are no carriers of Typhoid Fever, Scarlet Fever or Diphtheria among the milkers or any other workers. The cows producing certified milk must be from accredited herds, the barns must be kept absolutely clean, properly ventilated, and in the Summer time must be screened. The milk is drawn with scrupulous care into sterile small mouthed pails and every precaution taken to avoid contamination. As the milk is received

from each cow it is immediately cooled to 45°F., put into sterile bottles, double capped, and must be delivered at a temperature not over 50°F. The water at the farm must be carefully tested before the certificate is issued. While Certified milk is the highest ideal of safety as far as raw milk goes, we must remember that there is always the danger of infection by contamination by a careless worker, although Chapin⁵ states that Certified milk with proper oversight is the ideal solution of the milk problem, at least for the delicate infant or invalid.

Pasteurized Milk.

Pasteurization simply means that the milk is heated to 145°F., and kept at this temperature for twenty minutes. Proper pasteurization will kill the majority of harmful bacteria in milk without sterilizing it, and if proper pasteurization is done all the common milk-borne disease germs should be destroyed. After the milk is pasteurized it should be cooled, bottled by machinery, capped and put into cold storage. Pasteurization should take very little from the milk and add nothing to it but safety. A good many cities have considered milk safe when it has been properly pasteurized, but not enough attention has been paid to the production of this milk, nor to the temperature of the milk when it reaches the pasteurization plant. I do not see how milk reaching the plant at a temperature of, say, 75°F., even if properly pasteurized, can be expected to keep well. Many pasteurizing plants are out of date, having too much piping, which cannot be properly cleaned out, so that the good effect of pasteurization may almost be lost, there may be a false sense of security, and protection may exist in name only.

Milk Supplies.

For the purpose of this paper, Milk Supplies in Ontario may be divided as follows:

- (1) The Farm.
- (2) Towns and Villages.
- (3) Small Cities.
- (4) Cities of over 25,000 Population.

Milk Supply of the Farm.

The farmer, more than any other person, has under his direct control the health of his family, and to a great extent he can prevent disease in his own household by special attention to the drinking water, the sanitary arrangements and the food supply, which includes milk. Most farmers know that Tuberculosis in cattle is very prevalent, yet comparatively few have ever taken the trouble to have their cows tested. Rosenau² states that of five hundred and fifty-one samples of raw milk

from four cities in the United States, 8.3% showed bovine tubercle bacilli; this was corroborated in Great Britain by Professor Delepine*, who found on examination of milk from two hundred and seventy-two separate farms that 9.5% contained the tubercle bacilli. Other investigators have found that butter and other milk products also were infected. Surely, then, the farmer should be positive that the supply of milk used by his own family is safe. Some farmers imagine that by looking at a cow they are able to tell whether it is tuberculous or not; but even a perfectly healthy looking cow that had no cough, had a good appetite and a general condition excellent for a milk cow has been proven to be infected with Tuberculosis for several years and to have raised several calves which were also infected with this disease*. The milk supply of the farm coming from cows free of Tuberculosis where ordinary cleanliness is used for the milk pails and other utensils, does not constitute a very great Public Health Problem and any farmer who wishes, may very cheaply and easily supply his household with a clean, pure milk supply.

Towns and Villages.

Comparatively few of the small Municipalities pay any attention to their milk at all, some have not even a Modern Milk By-law, and in many cases the by-law is not lived up to by the milk vendors. In these places the vendor is quite often the producer as well, lives near the Municipality and sells the milk in bulk. The milk supply can be checked up very easily if a little attention is paid to it, but when talking this question over with different Health Officers they have said that they have not time to bother with the milk supply, and asked what difference it made anyway; in answer to this I have quite frequently referred them to their infant mortality rate. The vendor has little or no capital involved, his milk cans are not properly sterilized, and the milk supplied is often as unsafe as his wagon is unsightly. A dirty outfit in the milk business usually means dirty milk, because if a vendor is careless in looking after his delivery wagon, he will likely be just as careless in looking after the milk.

Small Cities.

In the smaller cities where there is a part time Medical Officer of Health, the milk problem is a very difficult one. There is in this Province a satisfactory milk by-law for practically all the cities included in this group, but as a rule the number of vendors is too great for the population. Five cities of under 25,000 population have thirty or more vendors; most of them also have too many producers, one city having over one hundred, and seven having over forty. In many instances the

amount of milk per capita used by these cities is not great enough; one city of 22,000 population only using two thousand quarts daily. Two of the cities have practically their total milk supply pasteurized, but the average is about 65%. In order to get first-hand information a questionnaire was sent out to the Health Officers of practically all the cities in Ontario having a population under 25,000; there were fifteen replies, from which these data have been compiled. Eleven of the Health Officers of these cities state that there is a satisfactory milk by-law, two are fairly well satisfied and two are not. The farms supplying milk to these cities are inspected in most cases twice a year, and in five of the cities a monthly inspection is made, either by the Sanitary Inspector or by a Veterinary Inspector. Five of the cities insist on the herds being tuberculin tested, and nine of the Health Officers are not satisfied with the milk supply of their Municipality.

There very often is no regular milk inspector, the work being done by a Sanitary Inspector, who more often than not knows very little about scientific milk production. The pasteurizing plants are often obsolete and very little attempt is made to check up the quality of the milk by a bacterial count. The milk is received by motor truck, so that the transportation problem does not present itself. Quite often the producer is also the vendor, and the same condition which presents itself to the Towns and Villages also occurs in the Small Cities. In many cases the vendor only is licensed, more attention being paid to the milk on delivery than to the way it is handled by the producer. Ordinary raw milk is coming into our Municipalities at a dangerous temperature and with a large amount of gross dirt in it. This is being strained out by passing it through several thicknesses of unclean cheesecloth or cotton flannel before it is delivered to our citizens. Even if pasteurized, this milk cannot possibly be made safe.

Large Cities.

In the larger cities where full time Health Officers are doing their work well, the milk supply should be absolutely safe. Although the milk comes in from great distances, the farms where it is produced are regularly inspected by well trained men, the method of producing is checked carefully and the health of the cattle inquired into. The milk cans are sterilized before leaving the dairy in the city, and the producer is shown how to rinse these out before the new milk is put in. The milk is carefully cooled, is shipped into the city, pasteurized, bottled and delivered cold. The milk by-laws in these cities are very good, the producer as well as the vendor is licensed, and at the present time the safest supply of milk in Ontario is found in our larger cities. Each

vendor is checked up as far as cleanliness is concerned, and with the exception of a small amount of certified milk, all is pasteurized in a modern plant which is carefully inspected. Frequent bacterial counts are made, and the laboratory is used to an extent that is almost impossible in the smaller places. The transportation problem calls for special attention where milk is brought in from great distances, but this problem has partially been solved in the past few years by the motor truck. Milk leaving the farm with a temperature of, say, 50°F., will, however, remain reasonably cool for several hours.

Production of Safe Milk.

The weapon to be used in making milk supplies better is education, and each Medical Officer of Health must do his share in solving the milk problem. First of all, we must start at the fountain head of the supply to teach the farmer how to produce good, safe milk. A competent milk inspector must see that the regulations in regard to the construction, lighting and ventilation of the cow stables are carried out, that in the process of production no dirt gets into the milk, and instructions in the care of utensils be given. The tuberculin test should be used on every dairy cow, and the milk must be put on ice in a milk house as soon as received from each cow. With clean, cold milk sent from the farms, each Medical Officer of Health could easily make sure that his Municipality had safe milk.

In towns and villages it may not be possible to have milk pasteurized, but all milk should be bottled and should be delivered cold. The dairy must have a proper place to wash and sterilize the bottles and milk cans. If clean milk is being sent in from the farm it will not be necessary to strain it through several thicknesses of cheesecloth, for if it is necessary to strain out gross dirt, that milk can never be made safe.

The small cities must each have a milk inspector, most of his work being of an educational nature at the dairy farms. He should be looked upon as an adviser to the dairy farmer, and he should keep up to date in scientific milk production. These cities should insist that all dairy cows supplying their Municipalities should be tuberculin tested and all producers and vendors should be licensed. The milk by-law should be up to date. The quality of each vendor's milk should be determined at least monthly in regard to sediment, temperature and butterfat; and monthly bacterial counts should be done in the hot weather. Each dairy should keep a record of the sediment test and temperature of each can of milk received, and proper pasteurization should be carried out. The Board of Health should control the self-recording thermometers in order to see that a temperature of 145°F. has been continued for twenty

minutes. The cooler should be enclosed properly, the bottler should be of the automatic type, and the capping should be done so that the workman's thumb does not contaminate the milk.

In addition to this, the larger cities, on account of the longer haul, must insist on safe, cold milk from the producer, and should make sure that the milk on arrival is still cool. Warm milk, even after being perfectly pasteurized, cannot be made to keep well.

In Ontario it is said that 90% of the water supply is safe, and should any Municipality not have a safe supply the Provincial authorities quickly investigate. The Typhoid Fever rate per 100,000 has dropped steadily from 50.3 to 3.5 because of this vigilance. Is it not time attention were given to the milk supplies in Ontario in the same efficient way? If all inspection at the farms were under the supervision of Provincial officials, and good safe milk were being produced, it would appear that each municipality could then have a safe milk supply. Were this done, there is no doubt that the death-rate among the children in this fair Province would be materially lowered.

REFERENCES

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- ⁴MacNutt, J. S.—"The Modern Milk Problem."
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- ⁶Delepine, S.—"The Journal of State Medical Report," 1914.
- ⁷Ferguson, R. G.—"A Pure Milk Supply for the Farm Home."

TEMPERATURE EXPERIMENT

In order to determine the effect of temperature, we took two 5-gallon milk cans filled with water, one at a temperature of 98°F., the other at a temperature of 51°F. A pint bottle of milk at 56°F. was placed with the milk cans. All three were put on a cement floor in a room where the air temperature was 76°F., readings being taken every hour from 3 p.m. until 7 a.m. the following day.

Hours	Time	Air Temp.	Warm	Cool	Pint Milk
			Can 8 gals.	Can 8 gals.	
	3 p.m.	76°	98°	51°	56°
1	4 p.m.	76	94	56	64
2	5 p.m.	75	90	59	69
3	6 p.m.	75	86	62	70

Hours	Time	Air Temp.	Warm	Cool	Pint Milk
			Can 8 gals.	Can 8 gals.	
4	7 p.m.	75	84	64	70
5	8 p.m.	74	83	64	70
6	9 p.m.	74	82	64.5	71
7	10 p.m.	73	82	65	72
8	11 p.m.	71	80	65	71
9	12 p.m.	70	79	65	70
10	1 a.m.	68	78	65	68
11	2 a.m.	68	77	65.2	67
12	3 a.m.	67	76	65.2	67
13	4 a.m.	67	75	65.2	67
14	5 a.m.	67	74	65.2	67
15	6 a.m.	66	73	65.2	67
16	7 a.m.	68	72	66	67

The Six Questions

Given below are the six questions which a group of outstanding Canadians, interested in the problem of proper home training for the oncoming generations, have considered and answered:

1. Does the present-day parent compare favorably or unfavorably with the parent of past generations?
2. To what extent can parents be blamed for juvenile delinquency? And in what respects?
3. Can a parent, by controlling environment and companionship, mould the character of the child as desired?
4. Do you believe in the principle of parent education? If so, what should it include?
5. At what age do you think parent education should start? Should it be before or after marriage?
6. Do you think the inclusion of health as a major topic in a parent education scheme might do much to increase the physical well-being of the country?

To anyone interested in social hygiene—which should mean every Canadian, and does mean, interested in the physical, mental, moral and social well-being of himself and his community—the question of parent education is, at this time a matter of major importance.

It is an undisputed fact that the average individual, though comparatively satisfactorily equipped by education for many of the duties in life, approaches the greatest responsibility which can be undertaken—the problems of parenthood—with no specialized training whatsoever.

That some clear-cut and definite method of imparting accurate information must be developed, is granted. But since the whole question of parent education is still in a rather experimental stage, general discussion of its many aspects—how it should be done, when, by whom, and what it should consist of—cannot help but be of considerable benefit in advancing the work to the point at which it will be generally and effectively carried on.

It is for this reason that the opinions given here are presented. Six leading questions have been answered by a number of very prominent Canadians. It is not suggested that the comments they make include more than a small fraction of all they might say on each item considered. Neither is this article offered as a scientific treatise on the subject or a compendium of most of the existing knowledge concerning parent education which now exists.

But these opinions, and others which will be published at a later date, all of them from individuals whose word carries weight, and whose ideas on the subject are certain to be valuable, will be very helpful in crystallizing the general attitude towards the whole question of parent education. Undoubtedly that is needed since, though there is a widespread realization of the fact that the problem must be tackled, there is, on the whole, a considerable amount of vagueness regarding the way in which it is to be done.

One successful means of dealing with it was tried out with excellent results last winter by the Canadian Social Hygiene Council when courses for mothers and fathers, separately, were held and a group of specially-prepared lectures given. Though this lecture series will be broadened and made national in its scope this fall and winter, it is obviously only a beginning.

In the hope of speeding up the development of more methods and of providing material for more general discussion of the subject, these comments were gathered by the Council. They are given below. A list of the questions answered accompanies them.

MOST REV. NEIL McNEIL,
Archbishop of Toronto.

1. Unfavorably, in the great majority of cases. The difference lies in a weakened sense of parental responsibility. There are so many agencies now assuming the work of guiding and caring for children that the parents cast their responsibilities on these agencies.

2. Impossible to apportion blame between parents and environment. Parents begin too late to make children obey. When environment begins to influence the children, it is already too late to correct them unless the habit of respect and obedience was formed years before.

3. No. The moulding process must begin long before environment calls for control. At the age of six months, a child cannot understand what respect for parents is, but it can, then, or younger, learn to respect the wishes of its parents.

4. Yes. There is no efficient substitute for the family as the child's first school. The fundamentals of character are formed before

the age of six. The parent need not impart much knowledge. The object of parental education is in the emotions—a sense of reverence, a sense of honesty, truthfulness, a capacity to bear disappointment, etc.

5. A knowledge of the duties of parents and of the ways of treating children should begin at the time of marriage. The actual training of the child should begin within a month of birth. The child has then at least as much sense as a domestic animal, and domestic animals can be trained.

6. It would help, of course, provided that it is not one-sided,—that is, if happiness is not sacrificed to material well-being. Too much emphasis on health may lead to neglect of habit and the vital importance of habit-forming practices. Happiness depends more on moral well-being than on physical well-being. An interesting volume on the subject is: "Essays on Duty and Discipline," published by Cassell & Co.

HON. WILLIAM F. ROBERTS, M.D.,

Formerly Minister of Health for New Brunswick.

"I am absolutely in sympathy with your movement," Dr. Roberts says, in commenting on the question generally. "If ever the world needed this form of education specifically to prevent the future fall of the British Empire, and, for that matter, the white race, it is at this moment. There is, to-day, no such thing as the home as we knew it thirty-five years ago."

1. The latter.

2. To a very marked extent. Parents' time is being taken up with the demands made upon them by society and with amusement, resulting in a lack of good home influence.

3. Parents need frank and free education first. Then they can prove of service to their children—until then, no.

4. Yes—all that pertains to the laying of a foundation for a sane and healthy home, physically, morally and mentally.

5. At 12 years of age. Interesting information on this point is contained in a paper read before the Canadian Public Health Association in 1922 or 1923: "The Reconstruction of the Adolescent Period of a Canadian Girl."

6. Yes.

DR. JAMES L. HUGHES

Former Chief Inspector of Schools, Toronto.

1. Most of the training now is better than it was formerly. Until recently, nearly all child training was negative,—and therefore nil. God made children to be doers. The old training, still practised in most of the homes and schools, made them "don'ters" and "stoppers" and thus

robbed them of power. Coercion never kindled a soul, but blighted every soul it was used to influence. Comradeship has been taking the place of coercion, and, therefore, especially in schools, conditions are not so destructive of character and power as they were in the past.

2. Parents who stop children from doing things they plan for themselves, rob their children of power and character—real, vital character. The parents should, from the beginning of a child's conscious life, provide it with material suitable to its stage of development so that it may enjoy life by doing things it plans. That is the only way that child or man can take a step toward the divine—by achieving the visions that come into the mind.

Parents who are not comrade-partners of their children never truly guide them.

Many parents mislead their children by threatening them with punishment from God.

These children can never love God and so lose the true basis of character.

3. I do not like the word "mould" in regard to child training. Children should be allowed to develop—not moulded. A thousand things that have been moulded are each like all the others. No two children in the same family are born with the same powers. Each child has a "selfhood" or individuality, and the development of that selfhood is the most essential element in its true training. Yet parents and teachers, until recently, have really tried to mould them and make them all alike. Companionship—real companionship that does not degenerate into "boss-ism" or punishment—and recognizes that the child is entitled to a real life of its own, is the most vital influence in a child's true development.

4. I believe that high school students should be taught the basic principles of wise training of children. If properly taught, it would surely rank high in the list of high school studies as an agency in producing genuine happiness in the homes of the world by training children in a method directly opposite to that still practised in most homes.

The best thing I can suggest is the preparation of a book on true child development and the passing of a law that the groom in each marriage should produce the book at his wedding with his name on the title page.

5. It should start in the secondary schools and be continued and applied after marriage. I am afraid that only a small percentage of married people would join classes to take lessons. Classes should be organized for the large proportion of students that never go to high schools which they could attend before marriage.

6. I am afraid that it is too late, when men and women reach maturity, to begin their physical development. Health of body should be one of the major elements in the training given both in public and high schools. It is more important than knowledge-storing.

JUDGE H. S. MOTT,
Juvenile Court, Toronto.

1. I am strongly convinced that not only the children but the parents are living in an age of indigested opportunities. The application of modern science to the principles of pleasure seeking and other activities has opened up a new field of enjoyment. The use of the motor car has spread the walls of the home, until to-day the word "home" does not mean the four walls that it used to mean in times gone by. In the midst of these conditions we are making adjustments, and I have not by any means lost faith in the parent of the present day. This is a general statement; there are many who are falling down hopelessly; there are others who are battling manfully to meet their obligations, sometimes succeeding and sometimes failing.

2. This question must be answered in the light of the answer to the first. In a very important sense the parent can be blamed for juvenile delinquency, but there are many extenuating circumstances.

3. This question is open to a good deal of thought, and one somewhat hesitates in answering it on account of the many viewpoints by which it may be approached, but generally speaking, if the child is normal mentally and physically, and if it has hereditary equipment which is not too much impaired, environment and companionship will definitely and positively assist in the moulding of character to be desired.

4. Parents are very much in need of assistance in parent education. We have so many successful cases due to the assistance that has been given to the parents that has helped them to overcome their failure before assistance is given that there is no doubt in our mind about the value of parent education.

5. In answer to your fifth question, I would say that this parent education should start before marriage.

6. In regard to question number six, I somewhat hesitate, not being a medical man, to make any comment upon it.

JUDGE J. F. MCKINLEY,
Judge of the Juvenile Court, Ottawa.

1. Yes. Parents have always been neglectful. The children of to-day have a great many more temptations than those of yesteryear.

This makes the parents' responsibility all the greater—which responsibility they do not, apparently, realize.

2. Ninety per cent. of the delinquency which has come before me has been occasioned as a result of the disease, ignorance or neglect of parents.

3. Absolutely.
4. Everything.
5. Twelve years of age.
6. Yes.

This is the first of two articles giving a symposium of comments on the problems of parent education. In the second, which will appear in an early issue, the comments of Sir Robert Falconer, Judge Emily Murphy of Edmonton (Janey Canuck), Professor Peter Sandiford, and a number of other outstanding Canadians, will be published.

The Opening of the New School of Hygiene, University of Toronto

ON June 9th Sir George Newman, Chief Medical Officer of the Ministry of Health of Great Britain, formally opened the building which now houses the School of Hygiene and the Connaught Laboratories of the University of Toronto. Sir George arrived in Toronto on June 7th, and for the three days of his visit his time was completely taken up with appointments. On the evening of his arrival he was guest of honour at a dinner at the York Club given by the Connaught Laboratories Committee of the Governors of the University. Colonel Albert Gooderham, Chairman of the Committee, acted as host. The guest of honor was introduced by Sir Robert Falconer and Sir William Mulock. Sir George responded in an easy and delightful way. Then and later he impressed all who met him by the breadth of his knowledge and the charm of his manner.

On the following day he officiated at the opening of the new laboratories of the Hospital for Sick Children. The same evening the Connaught Laboratories, Professor FitzGerald acting as host, entertained in honour of Sir George at dinner at the Toronto Hunt Club. The guests of the evening, as on Tuesday evening, were the heads of the departments in the Faculty of Medicine of the University, and others who have been closely associated with medical activities. Canon Cody, Chairman of the Board of Governors of the University, and Doctor F. N. G. Starr, President-elect of the Canadian Medical Association, welcomed the guest of the evening. Canon Cody emphasized Sir George's immense responsibilities in his several capacities as Chief Medical Advisor to the Board of Health and the Board of Education; as Medical Assessor for the Imperial Universities Grants Commission; as Treasurer of the General Medical Council, and as a director of the Dartford School of Physical Training for Women. Canon Cody asked Sir George to give the members of the Toronto Faculty of Medicine the benefit of his breadth of knowledge and experience by advising along what lines the medical education in Canada should progress. In his reply Sir George made several very interesting points. He asked if it were not possible that the medical course in Canada was becoming too long, and that students without considerable financial support were prevented from entering the field. He emphasized the necessity for more clinical teaching. The laboratory must always be used as an instrument, and not as the final judge. He is a strong believer in the great benefit to be derived from practical work.

Sir George was pleased to find a strong tendency in the University of Toronto to lay stress on term marks obtained by students and not to depend so much on the results of the final examinations. He was firmly convinced that a great effort should be made to familiarize the general practitioner with every advance in science, particularly in regard to preventive medicine. "There can be no general advance", he said, "in public health, until the practitioner, who is in close touch with the people, is fired with the ideals of preventive medicine."

At 10.30 a.m., June 9th, the School of Hygiene Building was formally opened. Before a representative gathering in Convocation Hall, Sir Robert Falconer and Canon Cody introduced the chief speaker. In his introductory remarks Canon Cody brought out many interesting facts. It is a mistake, he said, to think that a provincial institution such as the University of Toronto, receives no benefactions. This University has already received Hart House, numerous gifts to the hospital, the Eaton gift for Medicine and Pediatrics, the gift of \$1,000,000 from the Rockefeller Foundation, the Whitney bequest of \$400,000., numerous scholarships and bursaries from various sources, and now this beautiful building, the new School of Hygiene, from the International Health Board of the Rockefeller Foundation. Doctor Cody wished to express the sincere gratitude of the University to the Rockefeller Foundation for this building and its equipment. He went on to describe what he called "the romance of the Connaught Laboratories." In December, 1913, the work of these laboratories was begun under the direction of Doctor J. G. FitzGerald in a small stable near the University. The project received the sympathetic support of Sir Edmund Osler and Sir Edmund Walker. From this modest beginning the laboratories have ever advanced. In 1915, thanks to the generosity of Colonel A. E. Gooderham, a farm of 50 acres was secured twelve miles from the University. On this property were erected most complete laboratories and stables for the production of Public Health Biological Products. The University section of the Connaught Laboratories is housed in this new school of Hygiene, the gift of the Rockefeller Foundation. Doctor Cody outlined the events which led to this magnificent gift. Foremost in this connection he placed Doctor FitzGerald's own work and personality. The achievements of the Connaught Laboratories are well known in this and other countries. Doctor Vincent and Doctor Russell of the Rockefeller Foundation visited Toronto and inspected the existing laboratories. They saw the Department of Preventive Medicine under Doctor FitzGerald. They found an excellent medical faculty, a well equipped hospital near the University, and admirable provincial and municipal departments of public health. They finally asked Doctor FitzGerald what could be done for the public health in Toronto. The new building

is the result of this request. It was Doctor FitzGerald's idea that the various activities of the School of Hygiene and the Connaught Laboratories should be housed under one roof. "Doctor FitzGerald possesses", said Doctor Cody, "a rare combination of brilliant administrative abilities and an equally brilliant knowledge." "In all his work he has been aided by his Chief of Staff, the Associate Director, Doctor R. D. Defries."

Sir Robert Falconer, after stressing the importance of the occasion, introduced Sir George Newman and called upon him to make the opening address. Sir George began his address by emphasizing the points already made by Canon Cody of the unique combination of activities gathered together in the School of Hygiene. He said that he had the honor of conveying to the University of Toronto in its new undertaking the well wishes of His Majesty's Government. Mr. Neville Chamberlain, Minister of Health, and Lord Eustace Percy, Minister of Education, were particularly interested in this milestone of Canadian medical progress. Sir George delighted his audience by a brief résumé of the history of Medicine from the days of the Coans and the Nidians. As the followers of Hippocrates, chief of the Coans, we are carrying out the ideals of this ancient school. He referred to the great Anglo-Saxon names in medical history which are familiar to all—Harvey, Hunter, Jenner, Lister, Morton, Simpson, and others. He spoke of the number of virulent diseases that have been harnessed within recent years and the resultant increased expectancy of life. Public Health authorities in Toronto were complimented on their splendid record of achievement in preventive medicine in this city. The speaker commented on the fact that the maternal mortality rate is unnecessarily high in Canada. In conclusion, Sir George emphasized the fact that we are living in the Golden Age of Medicine, and that in the near future other wonderful discoveries will undoubtedly be made. After Sir George's speech, Sir Robert Falconer extended an invitation to those present to inspect the School of Hygiene Building. A large number availed themselves of the opportunity. The School of Hygiene* contains:—

- (1) The Department of Hygiene and Preventive Medicine, which is a Department of the Faculty of Medicine also of the School of Graduate Studies.
- (2) The Department of Public Health Nursing.
- (3) The Section of Epidemiology and Vital Statistics.
- (4) The Section of Physiological Hygiene. Both of these sections are for research and teaching.

*The names of the members of the staff of the School of Hygiene are given in the Calendar of the Faculty of Medicine of the University of Toronto.

- (5) The Connaught Laboratories for research and public medical services, and the preparation of antitoxins, vaccines, Insulin, and services, and the preparation of antitoxins, vaccines, Insulin, and other Biological Products.

The under-graduates of the University receive the following courses in the school:—

- (1) A course of lectures and demonstrations in Preventive Medicine, Hygiene, and Sanitation for students in the fifth year of the Faculty of Medicine.
- (2) A practical course of three weeks' duration in Preventive Medicine and Public Health.
- (3) Lecture courses in Hygiene and Sanitation provided for students in the Faculties of Applied Science, Household Science, and the Department of Social Service.
- (4) A course of lectures is given to Forestry students on First Aid, water supply, and the elements of Hygiene.

For graduate students in Medicine there is a course of instruction leading to the Diploma in Public Health. A course of instruction in Industrial Hygiene is also available. Suitable candidates for the University degrees of M.A., and Ph.D. in the School of Graduate Studies are accepted, and facilities for their work provided. Post-graduate work for Public Health Nurses is also given.

Facilities for research in all branches of the activities of the School of Hygiene are provided by the Research Division of the Connaught Laboratories. At the times of the official opening of the School of Hygiene, at the request of the President of the University, Professor FitzGerald announced that the Board of Governors had accepted the offer of the Connaught Laboratories to provide funds for from one to three fellowships for post-graduate work in the School of Hygiene of the University of Toronto. These fellowships are for the term of one year and are known as the Connaught Laboratories Fellowships. The award carried with each fellowship is to be not less than \$1500, and not more than \$1750. The fellowships are to be awarded on the nomination of the Deputy Minister of Health, or corresponding official, of the several provinces of the Dominion of Canada. There are not to be more than three fellowships granted in one year. Nominations for fellowships are to be received from the several provinces of the Dominion in rotation.

The Contribution of the Junior Red Cross to Public Health

By MISS ELSIE GRAVES BENEDICT,

Director Junior Red Cross Division, League of Red Cross Societies.

I ACCEPTED the very great honour of addressing this distinguished gathering with hesitation. Your own Chairman of this Section is perhaps better qualified than any other one person in the world today to speak on this very topic. Leader of your Canadian Nurses, School Hygienist, Director of the Junior Red Cross in your National Society, versed in the problems of Public Health, and an excellent speaker, Miss Jean Browne could give you better than I the meat of this subject. She shared, as you know, with Dr. Rene Sand, the famous Belgian, the honours of being the two foremost exponents of Junior Red Cross in the domain of Health at the Conference of Educators, assembled under the auspices of the League of Red Cross Societies in Paris, during the summer of 1925. Moreover, of the fifty-four national Red Cross Societies federated in the League of Red Cross Societies, the Canadian Red Cross is known to have been especially successful in this particular field of Junior Red Cross endeavour. However, she, your Chairman, requested my participation in this meeting in her own inimitable way: you know the way! It is one few can resist, certainly not I, her collaborator and friend. Besides this, knowing that on the way across the continent from my home in California I was to have the cherished opportunity of seeing some of the work of your Canadian Juniors, I greatly desired to be allowed to meet at this gathering you whose cordial collaboration has been so great a strength both as example and encouragement to your Canadian school children, in order that I might offer you my homage and congratulations. But as even this treasured experience has been but a glimpse of the health phases of Junior Red Cross throughout this mighty territory of northernmost America, I shall leave reference thereto for others of your own authorities, and confine my remarks to the contribution being afforded by this movement of Red Cross youth to Health as I have observed it elsewhere in many countries, under various conditions, and amongst differing races. I shall endeavour to give you facts rather than theory, leaving to yourselves their application to the problems in which you are interested.

Address before the First Session, Tuesday, June 14th, 1927, Toronto, Canada, of the Public Health Nursing Section of the Canadian Public Health Association.

Neither shall I attempt a full exposition of the nature of Junior Red Cross. You are, I understand, already well informed on that. Moreover, to do so fully were to outline for you the whole Peace-time programme which has unfolded since the cessation of the world war. For the Junior Red Cross stands in relation to the whole somewhat as does the Understudy to the Leading Lady! Imagine, nine and a half million understudies on four continents in both hemispheres are in training for their parts under the noble motto, "I serve", are practising during the years when they themselves are flexible, open-minded, in the making, physically, mentally, and morally. Understudies, ready to act, indeed though always young and sometimes inexperienced, ACTING already, and as practice leads somewhere near the goal of perfection, the Red Cross Societies of the earth should one day find an adult population prepared to give a notable performance of the Great Rôle of Membership—one-with-another, to play which perfectly would bring in—what?—the millennium? Alas! From such flights of imagination one comes back to the bumpy road of the present day, realising keenly that this millennium is yet a long way off! And yet, viewing the condition of the peoples of the earth, one would feel despondent were it not for just such occasional flights of fancy wherein we view the possibilities, were the majority of the rising generation really to be given the chance to play the rôle of adult life according to all the rules of healthy living. And after all, WHY NOT! Even in this eye-wink in eternity, the seven or eight years since the Red Cross Societies awakened to such possibilities for their child members, even in this short time, experience has proved that school children can respond and have already responded to a degree unprecedented in history, to the right kind of approach in the concerns of Public Welfare, including health.

What is this approach? And how does it come into the field of Red Cross endeavour? Most of the Red Cross Societies of the world, realizing that there can be no armistice with disease, no truce in their war against the sources of human suffering, consider popular education in health to be one of their primary responsibilities, even though this rôle is supplementary to or in collaboration with, or even a co-ordinating factor in all other good work being done in this same direction. Obviously such education includes that of the child population. Obviously also there are many ways of approaching the child:—Through the parents, the environment, the school inspection system, etc., etc., as those of you who are Public Health Nurses understand thoroughly, treading as you do, with the physicians and the school teachers all these necessary and important avenues. I shall make no attempt to indicate where and how the Red Cross influence helps in all of these activities FOR the child by

the adult. May they ever increase! But my topic of Junior Red Cross is all the more striking, if I may be permitted to say so, for this very elimination. For thereby the Red Cross action through and by the Junior Red Cross is isolated for observation. And at once we see that its distinctive contribution is the fact that it does not come down from above, not from adults FOR children, but springs up from below as it were, from the children themselves. *It secures their ardent participation in what concerns their own health and that of others.* Professor Harry Overstreet amusingly describes the difference between "Instruction" and "Education" by likening the process of instruction to rows of Little Mugs receiving from a Large Jug. The Large Jug pours in the information until the Little Mugs are full, and then the Little Mugs move out from beneath the Jug! I do not need to insist to this audience that modern children are much *more* than passive Little Mugs! They are exceedingly positive, even dynamic beings. They want to take an active part in the real affairs of life. They desire to participate. This is what the Junior Red Cross seeks to insure—this opportunity for participation and co-operation. Wherever a group of Juniors exists—and they exist in the schools, for the class is their unit of organization, the class-work is one of their main fields of endeavor—wherever they are, in real understanding membership, there the School and Health authorities, Nurses or Lecturers, will find eager acceptance of offered information and, what is more helpful, earnest endeavour to practise what is preached.

But all countries are not so fortunate as Canada in having well-established, proper, and efficient Departments of School Hygiene with all necessary equipment of people and supplies. Consequently the Red Cross, true to its spirit of service, has in many lands been able to show the way, demonstrating the need, and at least partially and temporarily filling the need before such public services were organized. In some way and as promptly as possible the dark murk of ignorance must be penetrated, must be dispersed and the Laws of Health uncovered. Once this is done, the true action of Junior Red Cross appears, in leading to the practice of these Health Laws. Where ignorance prevails this is often a real achievement on the part of the children, who are in this age frequently the bearers of knowledge which has failed to reach their less fortunate parents. How to sleep with open windows, when double panes are puttied tight! How to free heads from lice when, as in Albania and Macedonia, lice have hitherto been regarded as sacred symbols of life, for the naive reason that vermin leave the dead! How to make it understood that the anopheles mosquito is the instigator of malaria—when the belief is that this scourge comes from eating blackberries—an idea held in some parts of the Balkans! How to take a bath once a week when, even in that magnificent centre of art and culture, Vienna,

some children were found sewn into flannels in November and cut out of them in March! Yet the ardent Juniors, inspired by their concept of a sound body as a means to greater service, have solved these and harder problems, with success, as many a report in the Secretariat of the League of Red Cross Societies in Paris, and hundreds of others in each national headquarters, testifies. The Junior Red Cross reminds the child of the importance of good health, imparts supplementary information by means of reading matter, posters, and plays, and then the very nature of the Red Cross, its spirit, helps to transmute this knowledge into action.

I recall vividly an incident which occurred several years ago in Slovenia. A lecture was being delivered by a local doctor, under the auspices of the National Red Cross, illustrated by a film from the lending library of the League of Red Cross Societies. This motion picture showed the application of sane methods of sanitation, rest, and correct diet; and their effectiveness in the cure and prevention of tuberculosis. During the projection, sobs, heartbreaking sobs, burst forth in the darkness. People rushed to see what had occurred. A little girl was found weeping so uncontrollably that she could not, for some moments, tell the reason. At last it came. She was weeping for joy! It seemed that her grandmother, her parents, in fact all her immediate family had died of that dread malady, and she had been told that she must follow that same dark road. Now she found that such a fate could be avoided. She wept in gratitude. It does me good to know that in that very place now there is a vigorous Junior Red Cross activity. For this means that this little girl, and others like her, now have the encouragement of group effort enabling them to walk bravely that road back to health. They have clean hands, ears, teeth, cleaner homes, and even school-rooms, resulting from this collective practice. They find the desire for personal strength and comeliness ennobled when it is seen to be a sign of willingness to preserve and build up the public standard of health and welfare.

This Red Cross way of working not only dispels ignorance, but does away with the necessity for frightening children with horrible tales and pictures of disease. Last November, at a meeting in the Isle of Man—a meeting to initiate a Manx Red Cross Society—a school teacher arose offering this comment: "For years I have struggled with the problem of the boy who thinks it manly to go unkempt, and 'sissy-fied' to go clean. I found I could not scare him into cleanliness by threat of germs or death. But the best in him responds when you touch him in the quick of his relationship to the welfare of others". It is an encouraging sign, in an age when humanity needs encouragement, to know that the spirit of altruism can find such swift response, and this has proved true wherever the Junior Red Cross has been given a real trial, be that place where or

what it may, orient or occident, civilized or uncivilized, under all conditions of climate, and under all influences of religion and social tradition.

Sometimes this action contributes very definitely to the general community welfare. The Greek Juniors, for example, learning of the ravages of the malaria-bearing mosquito, go forth themselves in veritable swarms, to discover breeding pools, to destroy larvae, to help, if they are old enough, to clean and straighten the channels of meandering streams. I am informed that the Greek Government has sent official thanks to the Greek Red Cross for the part taken by these school children in combatting this plague of insects. Children especially enjoy being allowed to assist in all sorts of "Clean-up Campaigns". This is especially true of my compatriots in the United States. Frequently the reports we get are not without their humorous side. In the Magazine of the Siamese Junior Red Cross we rejoiced over a tale of a small Siamese lad who, finding a dead dog floating in the canal beside his house knew enough about sanitation to "shove him off to the next landing". But the boy at the next landing objected, and an argument, almost as unsavoury as its subject, began, to be settled only by a wiser child who pointed out that the interests of the whole village would be served by burying the dog. Evidently the satisfaction which the three derived from this first act of public service was such that they will feel disposed to continue burying other sorts of "dead dogs" until some day, inevitably, their understanding will so widen as to enable them to see that their efforts would be more wisely spent in seeing that dead dogs were never thrown into the canals at all. Because the whole tendency of this movement is to begin in the immediate need of the group, home, and school, then to widen out in usefulness as the child grows to manhood, until the area of his interest includes his community, his nation, and finally that greater unit, *his humanity*. Later I shall indicate how even now this wider outlook is being induced.

There are many ways in which the Red Cross utilizes this good-will for community and national service, in direct connection with concerns of the Public's Health. You have another example of one of these ways here in Canada. I refer to the Crippled Children's Fund, to which Juniors from all over your country contribute their earnings and savings, and from which some 5,000 boys and girls have been remade nearer to their heart's desire and into useful happy members of your Commonwealth. A wonderful achievement in itself! But think what it means to the givers also! "In like manner have the New York City Juniors, by their own efforts, paid for various activities, such as eyeglasses for those who could not otherwise have them, with so many thousand dollars that one scarcely dares credit one's own eyesight in reading the statistics, for these approximate a sum of \$50,000 yearly." In passing through London

last summer I found a similar state of mind over Junior Red Cross Statistics. I can't resist telling you of it. Having stopped to pay my respects at Headquarters of the British Red Cross, I went up to see one of my personal friends on the staff of the Junior Section. In her office my eye fell on a freshly lettered poster, something about "Juniors linked for service around the world", and I exclaimed, "Why! Haven't we sent you the latest statistics? I see you have the world membership down as seven million. It's now nine million". (This was before the last count of nine and a half million). My friend hesitated an instant then observed, "We had it nine million, but General C. said, 'What! NINE million! Gad! Nobody will ever believe that! Cut it to seven'." I feel the same way about the sum of money the children of the United States raised after the war for devastated Europe. It is so large you feel nobody will believe it for it runs over two million dollars. Children are so plentiful! Fortunately! And when they begin doing things all together, even though the act of each is very small, almost insignificant, the cumulative results are astonishing. Perhaps no achievement is more remarkable, considering the circumstances, than that of the Juniors in the Philippines. Through their own work, penny by penny, each year, they have raised enough money, first to equip with medical supplies, and then to support 73 travelling Dental Clinics, treating over 300,000 children during the year 1925, who would otherwise have no means of visiting a dentist.

However, we who work in the centre of this world movement, in the League Secretariat in Paris, have to be careful not to let ourselves jump to conclusions which are perhaps unwarranted, when such figures come to us, as they do from all over the world. Statistics are very tricky! And yet, they may also be very significant, and for that reason, despite their dangers, we cannot afford to disregard them.

I am sure you will agree that it is best to try not to use these startling summaries of accomplishments as the sole basis for judgment, but to look also for the more modest achievements, realizing that in these is to be found a more usual type. Yet even so, everywhere we find results. In Riga, for instance, through the help of the Juniors in the United States, and by their own hard work, the Latvian Junior Red Cross established several hot lunch canteens, of a very simple, even frugal nature. Yet, when I visited Riga a few months ago, I found that these little canteens, serving only cocoa and bread, had so decidedly proved their worth in the improvement of health, that the municipal authorities had agreed to continue them and start others. Our archives are overflowing with reports of countless similar activities.

This function of the Red Cross as Demonstrator of Needs showing the way over which the more deliberate machinery of the government

may follow, sometimes assumes national proportions from comparatively small beginnings. Thanks to such power of demonstration the Belgian government has recently placed in the competent hands of the Belgian Red Cross a large sum of money, to equip and organize playgrounds throughout the whole country. Speaking of Belgium, the Junior Section of that strong Red Cross Society is now regarded by the Government as its official means for the promotion of School Hygiene. This is a notable action in a country where the welfare of the child is so well understood and ably safeguarded. The Belgian Red Cross has published amongst others a booklet, especially for teachers, giving indications for the use of the Junior Red Cross in connection with the attainment, or retention, of health. This is perhaps the best treatise of its kind now existing in any language, for it takes into consideration those points where the modern psychologist and mental hygienist joins with the doctor and the nurse in realizing how the proper canalization of energy, how joy and its effects, how the sense satisfactions in useful accomplishment, contribute to good results in both prophylactic and curative therapeutics.

So far I have chosen to illustrate my points from stories about children in normal health. It should be noted that the ministrations of Red Cross membership are equally powerful amidst the whirlpools of suffering—for the cripples and the bedridden. Could I bring to your imagination some of the instances I have witnessed, you would see with me another, deeper healing. But I spare you descriptions and offer only facts. When the leader of a Junior group in the school for cripples in Budapest was lifted on the table (he had no legs) to receive a decoration for faithful service, he spoke thus to the congress of Hungarian Juniors present there: "The hardest thing a cripple has to bear, harder than his pain or his physical handicap, is his relationship to humanity. Our group-work, one for another, under the sign of the Red Cross, has helped to heal us of this worst suffering". This is Public Health of another kind, but who shall say where one kind begins and another leaves off? The chief physician at the Latvian Red Cross Sanatorium for Bone Tuberculosis, at Krimulda, like many others who think deeply, sees health of mind and health of body as one inseparable unit. He told me so when I last visited there. He had, for one year, watched the effect of Junior Red Cross upon the Krimulda children, seen the little groups for the meetings when the nurses rolled the hospital beds together, and observed the older boys and girls in their joyful preparation of gifts to send overseas to other Junior members. "I consider", he said, "that this wholesome and inspiring activity is a definite factor working toward cure of this disease". I know of more extreme cases than either of these, pointing to truths we but dimly perceive, yet emphasizing that man is indeed a three-fold

creature, indivisible, body, mind, and spirit, each working for the perfecting of each.

To make these remarks in any way an adequate exposition of my subject I should tell you how the children are led to take a wholesome interest in their weight, height, correct posture, diet, exercise, cleanliness, in fact in the whole gamut of health-giving procedure. But time prevents my attempting to touch them all.

You will be able to supplement my omissions from your own store of knowledge about the work in Canada.

In conclusion I would only add a few words to show that although the Junior Red Cross is a spirit, it is not a dis-embodied one! It has organic structure, is a living being. Just as every one of the thirty-nine national societies who are fostering the movement has its nation-wide organism with its headquarters, its regional and local committees, acting as the heart and arteries to carry life-blood throughout the membership, so the federated Societies have their world structure whose peace-time work finds its heart-action in the Secretariat of the League of Red Cross Societies. Into and out of this central point of contact flows a stream of news of the children's work, stories, illustrations, all the vital signs of life with which to keep the members renewed in interest and to give them that wider outlook so essential in this era of human development. This material feeds into the publications of the member Societies, they choosing what they find useful. There are now 28 such magazines in 26 countries, devoted by each Red Cross Society to its child constituents, giving them, as I have said, a glimpse beyond their own frontiers into the lives of Juniors everywhere. The editors of these magazines are always eager for good literature bearing on matters of health, good health teaching, either plain or so skillfully disguised as to teach its lesson imperceptibly. I now come to another very important feature of the Junior movement, from which the teachers of the world, those joint parents and faithful allies of the Junior Red Cross are extracting what they need for their educational purposes. I mean the International School Correspondence. These albums full of photographs, bits of embroidery, songs, all the things that a class of school children choose to help them explain their life and land to others, are tracing innumerable pathways through the void that separates peoples, pathways over which better understanding may gradually travel. Into these albums go many ingenuous documents dealing with matters of health, the senders taking it for granted that the receivers, being Junior Red Cross members, will find interest therein. Consequently, these exchanges also are arteries in the distribution of information.

And now, having made many resounding statements, in justice both to my audience and my subject I feel that I should end with a word of

warning. It is this:—Were you to go into a school to see the work of the Junior Red Cross, trained observers that you are, you might not find it! For children are shy, especially of that which is very dear to them and which touches deeply their relationship to life, a life which they as yet cannot attempt to comprehend. Also as a rule, they cannot easily put their ideas into words. If you ask them, they may blush and become tongue-tied, unless the teacher will come to their rescue and, summing up what they have done in terms of her adult intellect, be their interpreter to you. However, as you *are* trained observers, I believe you will read in sign language, read the straight spine, the clear eye, the clean skin, the orderly tenure, the readiness for action. Then, if you can also read with the eye of your soul, read the feeling of good-will, good cheer, good fellowship, then you will, I venture, say to yourself: "Yes, the Junior Red Cross *IS* a contribution to Public Health." For in the last analysis the Junior Red Cross is not "an organization for health" or "a method of teaching health", it is HEALTH ITSELF, for it represents a healthful attitude toward all that concerns life. And its results will only be known as they become visible and multiplied in the next generation.

The Antisyphilitic Pharmacopoeia of Fracastorius

By THE HONOURABLE WILLIAM RENWICK RIDDELL, LL.D., D.C.L.,
President, Canadian Social Hygiene Council

(Having left untranslated many of the terms employed by Fracastorius,
I here collect and explain them.)

(Continued from June)

Thymbra: Satureia hortensis: Summery Savory, "Thymbrae suaves", Savory thymbra. "Syphilidis" Lib. II, 150. See Satureia, *ante*. It is to be distinguished from Thymbrea, which was a Sisymbrea, Dios. 2, 221, note.

Thymum (-us): Thymus vulgaris, Common Thyme, "Syphilidis", Lib. II, 195. "Thymbrae similis qui durior exit", which is similar to thymbra but harder.

Dios. 3, 35, vermifuge, emmenagogue, diuretic, laxative, eye-wash, &c., &c.

Culpepper, p. 374, helps sciatica and dulness of sight, shortness of breath, chincough, gout, carminative.

Quincy, p. 60, is interchangeable with Serpillum.

Tormentilla: Tormentilla vulgaris (or Sylvestris) Upright Septfoil: Heptaphyllum: Tormentils, root aromatic, astringent, styptic.

Dios. 4, 34, gives a figure, and the editors consider it a variety of the Quinquifolium and with the same properties.

Culpepper, p. 324, makes it styptic, antidote to all poisons, "not only resisteth all poison and venom of any creature but of the plague itself and pestilential fevers and contagious diseases as the French Disease, measles, pulples, &c."

Quincy, p. 91, in "great esteem in malignant cases attended by the flux" and "in checking a looseness in the measles, smallpox or fevers". It is sometimes called Bistorta.

Tragacantha: Gum of the Astragalus Tragacantha or Astragalus verus of Persia, a demulcent. Celsus, 4, 4, 3, uses it in ulcers of the mouth; 5, 2, as a vulnerary; 6, 6, 7, an ingredient of the Collyrium known as Cythium or Tephrium and, 6, 6, 12, of the Collyrium of Philalethes.

Dios. 3, 20, for coughs, sore throats, pain in kidneys and ulcers in bladder.

Quincy, p. 85, smooth and softening for coughs, catarrhs, female weaknesses.

Trichomanis (-es): Asplenium Trichomanes, Spleenwort: Capillaire rouge.

Dios. 4, 121, Fidicula Seu Trichomanes for same uses as Adiantum.

Trifolium: A general name for the Clovers, Melihots, &c. Trifolium asphaltites, the Greek and Latin Asphaltion, by the Greek called also Minuanthes, a kind of clover with long leaves and the odor of asphalt, the Psoralea bitumena of Linnaeus—See Pliny, *Nat. Hist.*, 21, 9, 30. Tripolium odoratum, the yellow Melilot, Melilotus officinalis.

Tripolium: Aster Tripolium—the Sea Starwort or Blue Daisy: The ancients believed that the colour of this plant changed three times a day, being white in the morning, purple at noon, and red towards evening.

Dios. 4, 120, taken in wine extracts water, urine, &c., *per alvum*, antidote to poison. The plant of Dioscorides, Serapion identifies with the Turbith, probably wrongly.

Les., p. 96, follows this identification.

Trochiscus: Troche—Trochisci Andronis, the Troches of Andron, a Greek physician whose date is uncertain and works lost: he probably lived sometime before the Christian Era and was first mentioned by Celsus. He is not the same as Andreas of Caustus as has been supposed.

Turdi: the Thrushes.

Tussilago: Tussilago Farfara, Ungula caballina, Coltsfoot, demulcent and expectorant. Dios. 3, 107, uses as suffitus.

Unguentum Aegyptiacum: Egyptian Unguent, made of powdered Verdigris 5 oz., honey 14 oz. and Vinegar 7 oz.—boiled to proper consistency. This is the Edinburgh Dispensatory formula—Quincy (298)—and corresponds to the oldest extant, i.e. that of Mesuë. Another formula is Verdigris 4 oz., Honey 1 lb., Vinegar 6 oz.—boil and add toward the end half an ounce of each of Rock Alum and Sal-ammoniac, Quincy (301).

Verbena: Verbena officinalis, European Vervain, a sedative. Much favored by Celsus. Dios. 4, 50, Verbenaca or Peristereon for erysipelas, ulcers, &c.

Culpepper, pp. 379, 380, for yellow jaundice, dropsy and gout, against serpents, venomous beasts, the plague, tertian and quartan fevers, &c., &c.

Quincy, p. 129. "Some pretend it as an amulet . . . the root in case of the King's evil to be cut just crossways and one part hung about the neck and the other in a smoky place: by which means the struma was to wear away as the root dried in the Smoak. Many country people pretend to do great feats with it in agues by applying it to the wrists in the form of a cataplasm and also to cure gouty pains and swellings in the same manner".

Verdigris: Properly sub acetate of copper, "green rust of brass", but sometimes improperly used of iron rust.

Vernix: Varnish, Orpiment, King's Yellow, See Auripigmentum: *ante*. There was also a plant (the Juniperus), the gum of which was called Vernix or Vernigo and much used by painters. See Dios. 1, 81, (notes).

Viola: A whole Family of plants—the Violets, Pansies, &c.: the Viola canina is emetic and cathartic as are some of the others.

Celsus uses Alba Viola, 5, 11, as a discutiant: and Flos Albae Viola, 5, 4, as an aperient. Dios. 3, 118, calls the Viola Alba, Leucoium, an emmenagogue, and ecboic, helps the gout and affections of the spleen. This is the same as Viola matronalis. He also has, 4, 107, the Viola purpurea, a stomachic, &c.

Les., p. 98, "Violas are ios in Greek", alleviate phlegm, heal eyes.

Vipera: the Viper.

Viperae Carnes: flesh of Vipers.

Viperinum vinum: viperated wine.

Dios. 2, 15, "the flesh of vipers if eaten cooked brings clearness of vision and helps in affections of the nerves, check increasing struma; they should be skinned and have heads and tails cut off, as these have no flesh . . . cooked with oil, wine, a little salt and anise". He does not believe the common story that those who eat vipers procreate pediculi—but some say that such food lengthens life. A salt is extracted from them.

(Galen, *De Simp. Med.*, Lib. XL, gives credit to the louse story).

Charas, p. 345, gives a prescription for Oleum Viperinum.

Viperas viventes, magnas & vividas No. xij
 Olei Communis lib ij
 Vini albi generosi unc ij

Extrahe oleum, secundum artem.

Take 12 live, large and bright colored vipers, 2 lbs. olive oil, 2 ounces of rich white wine—extract the oil in the professional way.

Then he has two prescriptions for powdered vipers; p. 195, the common one, and p. 197, "another and an elegant" one. They were skinned and eviscerated (leaving in liver and heart), had head and tail cut off, dried and brayed in a marble mortar—the elegant kind had sugar and oils of Angelica and Cortex Citri added. He also, p. 294, has Trochisci viperini, made of their trunks, livers and hearts dried in the sun.

Quincy, p. 205, discusses Dr. Mead's celebrated work on Vipers at other places he speaks of the salt, the fat, the oil, the Tincture, the Essence, the Broth and the Bread, but thinks little of any of them.

I am glad to be able to give further information as to the Viper in Medicine.

In the work of Dr. Richard Mead entitled "A Mechanical Account of Poisons in Several Essays", London, 1702, that very learned Medical man has the following to say about Vipers:—

"This leads me last of all to hint something concerning the use of the Viper in *Physick*; because Authors are very large in enumerating its Virtues against many, and those to some of them very obstinate Distempers.

"One of the first whom we find in Antiquity to have made use of the Flesh of this Creature to medicinal Purposes, was, I think, *Antonius Musa*, the Famous Physician to *Octavius Caesar*; of whom *Pliny* (Lib. 30, c. 13) tells us, That *when he met with incurable Ulcers, he ordered the eating of Vipers, and by this Means they were quickly healed.*

"It is not improbable that he might have learned this from the great Greek physician Craterus, mentioned often by *Cicero* in his Epistles to *Atticus*, who as (*De Abstin. ab Animal, lib. 1, p.m. 16*) *Porphyrius* relates, *very happily cured a miserable Slave, whose Skin in a strange Manner fell off from his Bones, by advising him to feed upon Vipers dressed after the Manner of Fish.*

"Be this as it will, in *Galen's* Time the profitable Qualities of the Viper were very commonly known; himself relating very (*De Simpl. Medic. Facult. lib. 11, c. 1.*) Remarkable Stories of the Cures of the *Elephantiasis*, or *Lepra*, done by the Viper Vine.

"*Aretaeus*, who most probably liv'd about the same time with *Galen*, and of all the Antients has most accurately described the *Elephantiasis*, commends as *Craterus* did the Eating of Vipers instead of fish in the same Diseases (*Curat. Diuturn, lib. 2, c. 13.*) And to this Purpose I remember, that as *Lopes* (*Vid. Purchas. Pilgrims, part 2, l. 7, c. 9*) in his Relations of the Kingdom of *Congo* in *Africa*, takes Notice how greedily the Negroes eat Adders, roasting them, and esteeming them as the most delicious Food: so *Dampier* (*Voyages, Vol. 2, Part 1, p. 53*) also informs us, that the Natives of *Tonquin* in the East-Indies do treat their Friends with Arrack, in which *Snakes* and *Scorpions* have been infused, accounting this not only a great Cordial, but also an Antidote against the *Leprosy*, and all other Sorts of Poison.

"The Physicians in *Italy* and *France* do very commonly Prescribe the Broth and Jelly of Vipers Flesh for much the same Uses, that is, to invigorate and purify the Mass of Blood, exhausted with Diseases, or tainted with Some Vicious and Obstinate Ferment.

"From all this it appears, that the main Efficacy of the Viperine Flesh is to quicken the Circle of the Blood, promote its due Mixture, and by this means cleanse and scour the Glands of those Stagnating Juices, which turning to Acidity, are the Origine of many, at least, of those troublesome Distempers in the Surface of the Body, which go under the Names of *Scrophulous*, *Leprous*, &c."

Vituli, calves.

Xiris: Iris foetidissima, Stinking Iris, antispasmodic and narcotic. *Pliny, Nat. Hist.*, 21, 20, 83, *Dios.* 4, 20, diuretic, for strangury, &c.

Xylobalsamum (*Xilobalsamum*): *Amyris Opobalsamum*. *Pliny, Nat. Hist.*, xii, 25, 54, or *Amyris Gileadensis*—*Celsus*, 5, 15, 7, note, useful in suppuration; 5, 24, an acopon (stimulant), *Dios.* 1, 18, note.

Zedoaria: Sometimes called Cassamunair, *Kaempferia rotunda*.

Zingiber: Ginger.

Zucharum: Saccharum, Sugar.

THE END

Decision in Nuisance Case

Mr. Justice Grant has lately given his decision in a nuisance case of considerable interest, at Hamilton, in favour of the plaintiffs, as follows:

"Judgment in favour of the plaintiffs directing issue of an order for removal or abatement of the nuisance, and restraining the defendants, proprietors of the industry, from carrying on the same until the nuisance has been abated to the satisfaction of the Provincial Board of Health, this order not to become operative for three months from June 30th, 1927, to afford defendants opportunity to comply therewith. Costs of this motion and hearing to be paid by defendants."

The nuisance referred to was caused by dust, smoke and noise from the plant of the Doolittle Company who carry on the distribution of broken stone, sand, etc. from premises across the street from a number of residences in Hamilton. The local board of health had sought in vain to have the nuisance abated and as the matter was one involving a considerable sum of money, the board, after passing a resolution to the effect that the conditions complained of were a nuisance, asked the Provincial Board of Health to report thereon. The report of the Board agreed that a nuisance existed and recommended its removal or abatement. It was upon this report and upon further evidence that the foregoing decision was given.

The Prevention of Diphtheria

By B. C. GRUENBERG,

Managing Director, American Association for Medical Progress.

WITH characteristic conservatism, the London County Council voted in October, 1925, against approving a general program of immunization of the children in the schools against diphtheria. The authorities did not feel at that time that there had been enough experience with the use of toxin-antitoxin, or other immunizing materials, to warrant a general adoption of the plan. Various local authorities, however, both in the metropolitan area and in other parts of England, Scotland and Wales, have carried on preventive work along the lines that have been most extensively developed in this country, so that the leaders of medical thought in England are now ready to endorse a general immunization program.

A special report has just come to hand from a Committee of the Medical Research Council on "The Prevention of Diphtheria" prepared by Dr. J. Graham Forbes. This gives a brief history of diphtheria, its treatment and prevention; a review of the Schick test of diphtheria susceptibility; an account of diphtheria incidence and mortality in Great Britain since 1910; a rather detailed account of diphtheria preventive work in Great Britain; and summaries of diphtheria preventive measures in the United States and in other parts of the world.

The report concludes that the value of the Schick test and of preventive inoculation has been amply demonstrated in the face of outbreaks of diphtheria, especially among the staffs of hospitals for communicable diseases and among the children in boarding schools and other institutions. "The large body of evidence already available leaves no doubt that the disease and its often fatal consequences may now fairly be called avoidable".

Especially interesting to parents and physicians who have been left somewhat confused by conflicting reports regarding the unreliability of the Schick test, and regarding the dangers in the immunizing material, are the sections of this report that deal specifically with these problems. The thousands of tests reported for England, Scotland and Wales (over 54,000) without any untoward results and the million or more immunizations in the United States and other countries without any mishap, give only a statistical preponderance against the few unquestionable disasters that have occurred. A thorough review of the cases in Dallas,

Texas, (five deaths in 1919) and in Vienna (six deaths in 1925) as well as of the severe reactions that followed the use of toxin-antitoxin among forty children in Massachusetts in 1924, led the investigators to the conclusion that the accidents were due to faulty technique in the preparation and handling of toxin-antitoxin, and that the dangers inherent in all pioneer work are now completely eliminated so far as concerns diphtheria immunization.

The Sanitary Inspectors' Association of Canada

INSPECTION OF WATER SUPPLIES AND SEWERAGE SYSTEMS

By A. E. BERRY, C.E., Ph.D.,

(Read before the Annual Convention at Brantford, Ontario.)

THE Sanitary Inspector, in the performance of his duties, is called upon to possess knowledge of many subjects. His duty appears to be two-fold, namely, enforcement of legislation and education of the public in respect to sanitation and health protection. In water supply and sewerage this two-fold function may be readily applied, and perhaps one of the greatest opportunities of the inspector for service to his community is in education of the public to the proper protection of private water supplies, and satisfactory disposal of residential sewage. To appreciate the problems encountered in this, it seems advisable to start at the first and determine just what factors are involved, and how they may be employed to the benefit or detriment of the work at hand.

While the Inspector's work is no doubt largely confined to private systems, some knowledge of municipal water supplies and sewerage is essential, and in many respects the principles which can be applied to one may be equally suitable to the other. The treatment of both water and sewage is usually, where at all extensive, in the hands of technical men trained in that work, but the protection of such raw supplies most frequently falls to the lot of the Sanitary Inspector, and in order to efficiently carry on this work a thorough knowledge of what to seek in the inspections is the first requirement.

The problems of water supply and sewerage are closely related inasmuch that a definite attempt is usually made to exclude raw sewage in all forms of drinking water supplies. The protection of a water supply, private or public, consists in the exclusion of substances of foreign material which may render the water either unpalatable or unwholesome. As a health inspector it is but natural to expect that your interest would rest in the protection of the public against water-borne diseases rather than unpalatableness. It is well known that the main water-borne diseases are of intestinal origin, such as typhoid fever, paratyphoids, diarrhoeas and others, and that all of these are caused by specific living organisms or bacteria, which may be readily identified and cultured on artificial media. The natural habitat of such organisms is in the human

body where they multiply very rapidly and produce those symptoms characteristic of the disease. The period of existence, under natural conditions, outside the human body is comparatively short, and no multiplication takes place in water or in soil. In the examination of water supplies it then becomes the problem of the inspector to determine the possibility of these organisms reaching the water, and remaining alive sufficiently long to reach the consumer.

The utilization of water analyses as an aid in arriving at this decision has been employed for many years. Before the development of the science of bacteriology chemical analysis were universally employed. Now bacterial analyses are used almost exclusively and the chemical more as a supplement. The interpretation of these bacterial analyses has always been a confusing problem, and it is invariably stated that such interpretation should be made only in conjunction with a sanitary survey of the source. The laboratory then, instead of determining the quality of the water, merely becomes an aid to the inspector in deciding on the safety of the supply in question. This fact is further shown by the nature of the analysis itself. The inspector is primarily interested in knowing whether disease-producing organisms are present in the water, yet in the report of the analysis no reference is made to typhoid or any other disease germs, but instead there is noted the presence or absence of colon organisms in varying quantities of water, it being taken that the smaller the quantity of water in which they are found the heavier is the pollution. These colon organisms of course do not produce any specific disease but their presence in water is noted for two reasons, *viz.*—they are easily grown and isolated on artificial medium, and they serve as a danger signal of more serious contamination. The fact that colon organisms are found, irrespective of quantity, is no assurance that the water is dangerous to health, but it merely serves to show that those organisms commonly associated with fecal matter and intestinal diseases are present from some source to be determined by an examination. A good water supply is free from all of these at all times. Owing to the rapid destruction of these, variations in analyses are common. A proper estimate of the quality should be made only from a number of samples.

The interpretation of a water analysis is further complicated by the fact that the test employed for this so-called colon group includes a number of other bacteria, and that they originate from a variety of sources, including hay, grain, agricultural drainage and others entirely apart from fecal matter. The safety of the water depends on whether this group is of human origin, for only in this connection are the disease organisms found. Water analyses do not distinguish between harmless soil bacteria and fecal organisms unless such special tests as the methyl red, voges proskauer and citrate utilization are employed. The inter-

pretation of the sanitary quality must therefore be dependent upon the source of the material found. Sewage may be present in small quantities and yet be very dangerous, while agricultural drainage appearing as heavy pollution in the analyses might be of small significance.

In the case of private water supplies, chiefly wells, an examination of the surroundings usually permits an estimate to be made of the safety or sanitary quality of the water. Objectionable material may enter a well either directly by means of the top or upper walls, or indirectly through the water supply feeding the well. Our analyses show that about 85% of the wells examined contain pollution. This appears very largely to be due to the use of non-watertight tops and cribbing. Where the top and the sides are made watertight for a distance of 10' from the surface there is little opportunity for surface organisms to reach the water of the well. The problem of determining the distance a well should be placed from pollution is a very common one, and is dependent chiefly upon the depth of the ground water from the surface and the slope of the ground. The upper layer of the ground is heavily infested with organisms which are readily shown in water analyses but the filtering action of the soil strains these out from the water and prevents their penetration to any great depth. It is interesting to note that the lateral movement of these organisms is very short until the ground water is reached. If this is close to the surface the organisms are able to penetrate the soil and then travel laterally with the flow of water for great distances. If the ground water is at least 10' below the surface or point at which the contamination is deposited there is thought to be very little prospect of any organisms penetrating this distance. In view of this the lateral distance through which pollution may travel is almost negligible until the ground water is reached. When this occurs the material may travel great distances and reach the well in a fresh condition depending upon the draught on the well, the slope of the ground and the porosity of the material through which it must flow.

In municipal waterworks systems where surface supplies are employed chlorination is almost universally employed. A great step has been made in controlling the correct dosage by the use of ortho-tolidin, a simple color test which may be employed by anyone. The Department has made use of this solution in the treatment of private water supplies by chlorine. Two dopper bottles are provided, one with a chlorine solution, and the other with ortho-tolidin. This has proven very useful for campers and others where the supply is considered at all doubtful.

In the disposal of sewage the chief problems encountered include protection against the pollution of water supplies, odours and flies. The location of privies, cesspools and septic tanks in relation to a water supply will be governed by the factors already mentioned in connection

with the protection of such supplies. The outdoor privy is usually objectionable, chiefly because of the fly nuisance. It is not so much that the housefly breeds in privies but more that they frequent such places and may be the means of carrying filth to food products. It is very difficult to make privies fly tight, but an efficient treatment is to cover the fresh exposed contents every four or five days with a light layer of chloride of lime, or that continuous use be made of ashes or earth.

The disposal of sewage by the use of septic tanks is the most common in the smaller municipalities. Instead of being an ideal, it is more a case of making the best of a bad situation, and has many defects. Because of the large quantity of water used the chance of polluting a nearby water supply is greatly increased. The direct discharge of the tank effluent to ditches is unsatisfactory, inasmuch that the purification takes place in the soil rather than the tank, the chief function of which is to break up the solids. The difficulties usually encountered in the operation of such systems are due to non-porosity of the soil, and inadequate drainage of the disposal bed. Tight soil is very unsatisfactory for such an installation. The size of a tank permits of variation, but it is usually advisable that it be capable of storing the entire flow of sewage for 24 to 36 hours.

In the disposal of municipal sewage one of the common problems is the degree of treatment, if any, required. A definite standard for this is difficult to fix, it being dependent upon the watercourse to which it is discharged. Where no water supply is involved sewage treatment is necessary only to prevent objectionable appearances and a nuisance in the stream resulting from a biological break down. To attempt to purify sewage so that it becomes a safe drinking water seems unnecessary. Chlorination of the effluent under certain circumstances, particularly where bathing beaches are involved, is often advisable, but the existence of other unavoidable pollution usually offsets the advantages gained through this treatment.

For a number of years the Engineering Division of the Department has been engaged in sanitary surveys of the various municipalities of which about 175 have now been completed. The procedure adopted and the information procured may be of assistance to sanitary inspectors who desire to tabulate such information in their municipalities and keep it up to date. In this survey a visit is made to every residence, and information secured *re* water supply, sewage and sanitation. This is tabulated on a standard form and a sketch of the location of the wells and privies made. Where the water supply is other than municipal, a sample is secured and analyzed. This information is plotted on a map of the municipality. By means of a suitable legend, all matters of sanitary significance are available at a moment's glance. Such a map shows the location of watermains, sewers, wells, privies, septic tanks, etc.

Monthly Jottings of the Sanitary Inspectors' Association of Canada

The prospects look good for a fine gathering at our Annual Convention, to be held in Toronto on September 14th, 15th and 16th. Mr. H. Cusack, Chief of the Division of Sanitation, Toronto, is very kindly assisting in preparing the programme and some good addresses are already promised.

Mr. W. C. Millar, Branch President for Ontario, recently attended a meeting of Medical Health Officers, in Toronto, and he seized the excellent opportunity presented by the attendance at this Convention of M.H.O's. and prominent men in Public Health work to urge upon them the importance of providing better facilities in Canada, and more especially in Ontario, for the proper training, examination and certification of Sanitary Inspectors. Mr. Millar pointed out that if the appointment of none but properly certificated Inspectors became law at once it would not be possible to supply the demand without robbing some City already employing such trained men. We think that Mr. Millar made a good impression on the Medical fraternity there assembled, and we hope that his efforts will bear fruit in the near future in so far as Ontario is concerned.

We feel that this movement, now that it has been started, will extend throughout Canada. The taxpayers throughout the Dominion who pay the salaries of Sanitary Inspectors are entitled to receive the highest quality of service in Public Health work and this can only be attained by setting up a standard for such officials. For the last 40 years now, it has been impossible in England, Scotland and Wales, for any Municipality to employ as a Sanitary Inspector a man or woman without proper qualifications.

In writing the above, we do not wish to be understood as referring to the men already in the service, many of whom are doing splendid work, but only to future appointments.

Now about the Convention. It should be no trouble for Inspectors living near Toronto to attend. But whether from near or far, we want representatives from all over Canada.

Fraternal greetings from West to East are contained in recent letters received from Messrs. J. J. Dunn, Calgary, J. B. Whiteoak, Calgary, W. H. Appleton, Saskatoon and T. Lancaster, Victoria.

Mr. Whiteoak regrets that he will not be able to be with us at the Convention but he hopes there will be a large attendance from the West and so knock the old adage "East is East", etc.



The Provincial Department of Health of Ontario

Communicable Diseases Reported for the Province by Local Boards
of Health for the Weeks Ending June 4, 11, 18, 25, 1927.

COMPARATIVE TABLE

	June 1927		June 1926	
	Cases	Deaths	Cases	Deaths
Cerebro Spinal Meningitis	3	—	5	1
Chancroid	—	—	—	—
Chicken Pox	851	—	454	—
Diphtheria	202	8	188	12
Encephalitis	1	2	—	—
Gonorrhoea	149	—	65	—
Influenza	2	3	—	20
German Measles	602	—	433	—
Measles	1408	9	2976	12
Mumps	151	—	37	—
Pneumonia	17	25	—	159
Scarlet Fever	410	6	373	3
Septic Sore Throat	8	—	—	—
Small Pox	70	—	36	—
Syphilis	136	—	72	—
Tuberculosis	111	57	164	77
Typhoid	52	2	33	—
Whooping Cough	143	4	290	6
Goitre	—	1	—	—
Puerperal Septicaemia	—	1	—	—
Infantile Paralysis	1	—	—	—
Erysipelas	1	1	—	—

The following Municipalities reported cases of Small Pox:—

Ottawa 14, Mersea 1, Brooke 1, Sarnia 2, Enniskillen 2, Mosa 2,
Woodstock 1, Alfred 2, Peterboro 2, Cumberland 7, Clarence 8, Copper
Cliff 1, Wellesley 1, Waterloo 2, Guelph 4, Toronto 20.

American Public Health Association Annual Meeting, Cincinnati, October 17-21

When will the peak of heart disease mortality be reached? What can we do about measles? How about the common cold? Has Prohibition promoted the public health? Are we giving attention to the nutrition of the industrial workers? Why is conservation of sight a public health problem? Is food poisoning a material factor in shortening the life span? How far have we gone and how far are we going in public health education? What is the place of the Government in public health administration?

These and many other pertinent questions pertaining to the health of the people will be discussed at the Fifty-sixth Annual Meeting of the American Public Health Association at Cincinnati, Ohio, October 17-21, with headquarters at Hotel Gibson.

This year the Annual Meeting will open officially at noon on Monday and close Friday noon, which gives opportunity for one more session than in previous years. The Ohio Society of Sanitarians and the Ohio Health Commissioners will hold their annual meetings in conjunction with the A.P.H.A. in Cincinnati.

Each of the nine sections of the Association—Laboratory, Health Officers, Vital Statistics, Public Health Engineering, Industrial Hygiene, Food and Drugs, Child Hygiene, Public Health Education, and Public Health Nursing—will hold individual section meetings. In some instances two or more sections will combine for joint meetings. The topic for discussion at the Forum Session is "Has Prohibition Promoted the Public Health," C. E. A. Winslow, Dr.P.H., Yale University, presiding. One session will be given to the discussion of mental hygiene from the angle of the home, the school, and the industrial field. An analysis will be made by a special committee on the health programmes in operation in normal schools and colleges and will be supplemented by constructive suggestions.

Dr. Herman N. Bundesen, health commissioner of Chicago, Dr. William H. Park, of the New York City Health Department Laboratories, Dr. Clarence E. Smith of the U.S. Public Health Service, and C. W. Larson of the U.S. Department of Agriculture are among the specialists asked to give the most recent developments in the sanitary production and handling of milk.

Several luncheon and dinner meetings will be held by sections, in-

cluding Laboratory, Public Health Engineering, Industrial Hygiene, Food and Drugs, and Public Health Education. Besides a special session on venereal disease control, a round table luncheon conference has been scheduled.

Trips to points of interest in and around Cincinnati have been arranged by the local committee. An attractive programme for the entertainment of the women guests and delegates at the Annual Meeting has been provided by the Cincinnati Committee.

Railroads will grant the usual reduced rate to members and Fellows of the Association going to Cincinnati for the meeting. Transportation certificates will be mailed to members of the American Public Health Association, September 1st. Application for reduced fare certificates and for information should be made to Homer N. Calver, Executive Secretary, American Public Health Association, 370 Seventh Avenue, New York City.

News Notes

An interesting Social Hygiene Exhibit was held in Winnipeg under the auspices of the Winnipeg Health League for two weeks, commencing June 6th. Addresses were given by prominent local speakers on the following subjects: "Prevention of Diphtheria", "Youth and Recreation", "Community Responsibility in Health Matters", "Infant Mortality", "Value of Prevention of Venereal Disease", "Care and Feeding of Infants to Second Year", "Teaching Truthfully the Facts of Life", "Care of Teeth", "Social Hygiene", etc. The attendance at the exhibit reached approximately 5,000.

Still another instance of the inevitable economic losses which follow any serious epidemic of preventable disease is seen in the effect of Montreal's typhoid epidemic on the city's very remunerative tourist trade.

Late in June, Maine health officers announced that any citizens of that state visiting Montreal would be promptly put under quarantine on their return home. This announcement, moreover, comes at the fag end of the epidemic, and there is no mention made of the date on which the ban is likely to be lifted.

From the Provincial Department of Health of Nova Scotia comes an interesting set of figures giving the percentage of the population in each of the nine provinces which has passed the hundred-year mark. Nova Scotia is well in the lead in the matter of the number of centenarians within its borders, and Dr. A. C. Jost takes this as evidence of the good health of the province as a whole.

The figures are as follows:

Nova Scotia	1 in 14,000
Prince Edward Island	1 in 22,000
Saskatchewan	1 in 36,000
Manitoba	1 in 47,000
New Brunswick	1 in 48,000
Ontario	1 in 51,000
Quebec	1 in 82,000
Alberta	1 in 84,000
British Columbia	1 in 87,000

A total of 6,943 children in London, Ontario, were inspected by the Nursing Department of Public Schools during the month of June, and of this number only 365 were found to be suffering from defects.

The closing of the Red Cross Emergency hospital in Montreal demonstrates a still further decline in the typhoid fever epidemic. The hospital, opened on March 30th, has been filled to its capacity of 165 beds until recently.

The following table shows the number of cases of typhoid fever reported in the various provinces of the Dominion during the month of June, 1918. The figures are in accordance with the reports of the health authorities.

Alberta	1
British Columbia	1
Manitoba	1
Ontario	1
Quebec	1
Saskatchewan	1
Yukon	1
Total	7

Editorial

HEALTH AS A POLITICAL ISSUE

The recent election in Manitoba created an opportunity for again emphasizing the desirability of continuous and increasing governmental action and popular support for measures having to do with improving community health.

Interest in the subject of communal well-being was sufficiently widespread for one candidate, Dr. E. W. Montgomery, a Bracken supporter, to make it one of the chief planks in his platform.

"It is not money in the bank or wheat in the granaries or cattle in the field that makes a country great," Dr. Montgomery said in the course of his campaign. "It is the quality and character of its men."

Pointing to the achievements of the past few years, he used them as examples of the greater things which might be accomplished in the future by united effort. Death-rates from tuberculosis and diphtheria had both been reduced, largely because the community was getting infectious diseases under control. But there was no reason, he noted, why the deaths from diphtheria could not be reduced to zero.

The major possibilities of health movements had not been even partially exhausted. They were, he emphasized, essentially peoples' movements, and it was essential that the average citizen should be kept in close touch with public health and hygiene problems.

The Bracken Government and Dr. Montgomery are to be congratulated on the sponsoring of this advanced point of view. It is high time for more of our public men to make a public issue of the matter of health conservation.

FREE CLINICS IN THE WEST

In view of the very vigorous movement sponsored by the Saskatchewan Section of the United Farmers of Canada, for the establishment of a free consultative clinic to give advice on matters of health and hygiene, the operation of a somewhat similar innovation in public health work throughout Alberta is of particular interest.

The Alberta clinic, financed and directed by the provincial government, consists of four members—a surgeon, a dentist, the superintendent of district health nurses and an assisting public health nurse.

It is somewhat wider in its scope than the suggested Saskatchewan clinic, since minor operations and a considerable amount of dental work

are among its duties, but its basic aim is approximately the same. It seeks to reach those sections of the rural population which are far removed from regular medical advice.

This summer, during one month, it visited six comparatively large towns and a number of smaller places. Five hundred consultations were held, and one hundred and sixty minor operations performed, as well as the regular dental work. More serious cases requiring operations were referred to city hospitals.

At each stop, an intensive educational campaign is carried on, utilizing schools, churches and town halls as headquarters. A very high percentage of the patients are children.

